

REMARKS

The Official Action mailed April 11, 2004, has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time. Accordingly, the Applicant respectfully submits that this response is being timely filed.

The Applicant notes with appreciation the consideration of the Information Disclosure Statements filed on January 14, 2004; May 11, 2004; February 24, 2005; September 25, 2006; August 22, 2007; and February 27, 2008.

Claims 1-20 and 46-59 are pending in the present application, of which claims 1-4 are independent. Claims 1-4, 46 and 47 have been amended to better recite the features of the present invention. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

The Official Action rejects independent claims 1-4 and dependent claims 7, 9, 11, 13 and 46-55 as obvious based on the combination of U.S. Publication No. 2001/0040645 to Yamazaki and U.S. Patent No. 5,298,768 to Okazaki and U.S. Publication No. 2001/0012089 to Shiraishi. The Applicant respectfully traverses the rejection because the Official Action has not made a *prima facie* case of obviousness.

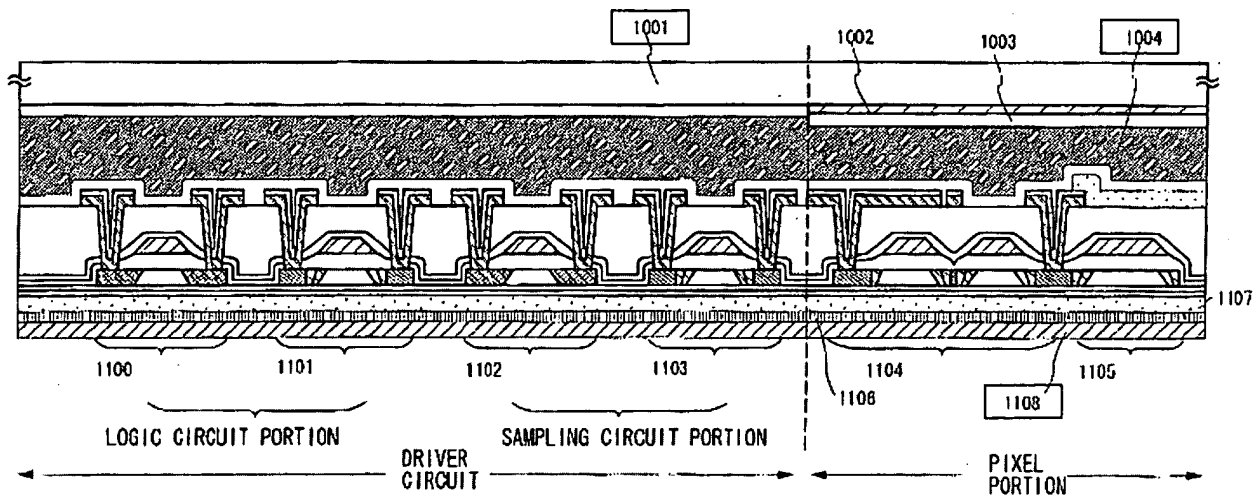
As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some reason to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the

problem to be solved as a whole would have suggested to those of ordinary skill in the art.” In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. Also, there is no proper or sufficient reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Yamazaki '645, Okazaki and Shiraishi or to combine reference teachings to achieve the claimed invention.

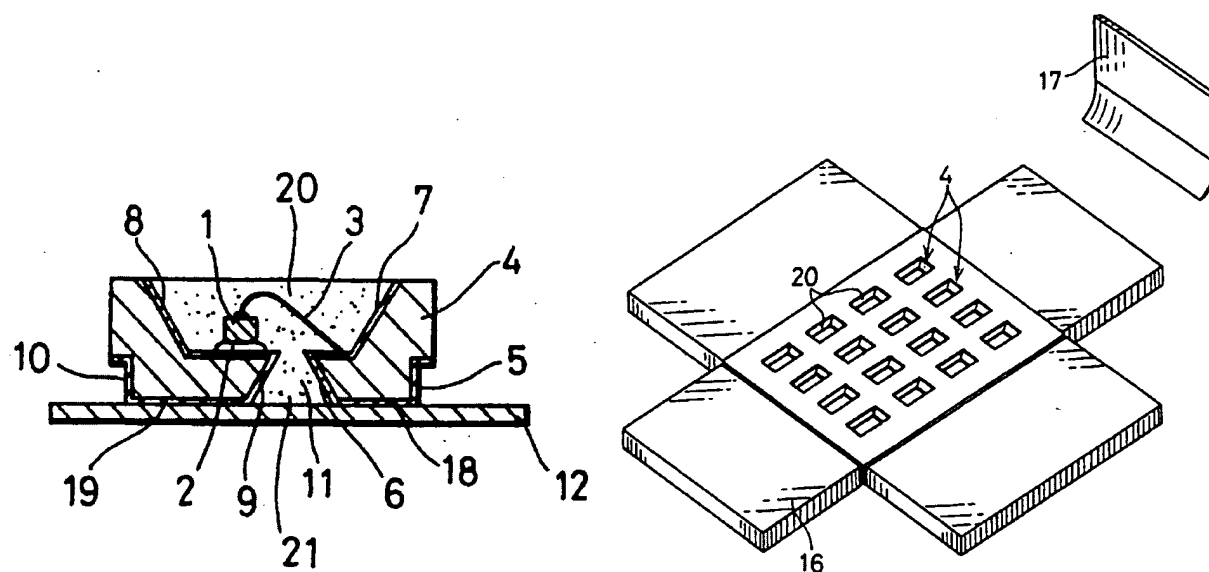
Independent claims 1-4 recite first and second plastic substrates and a light-emitting element formed over the first plastic substrate. Also, claims 2 and 4 recite that the first plastic substrate has a concave portion and that the light-emitting element is formed in the concave portion. For the reasons provided below, Yamazaki '645, Okazaki and Shiraishi, either alone or in combination, do not teach or suggest the above-referenced features of the present invention.

The Official Action asserts that Yamazaki '645 discloses a liquid crystal cell 1004 and a semiconductor device 202 between a first plastic substrate 1108 and a second plastic substrate 1001 (page 3, Paper No. 20080407; Figure 12 reproduced and annotated below). Although the semiconductor device 202 of Figure 2 is not illustrated in Figure 12, the specification appears to disclose TFTs 1100 through 1104.



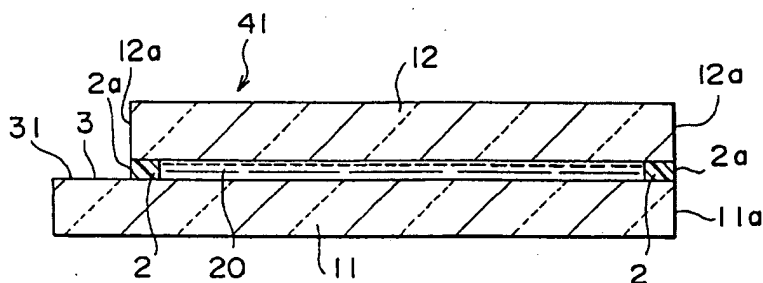
The Applicant respectfully disagrees and traverses the assertions in the Official Action. Contrary to the assertion in the Official Action, Yamazaki '645 is, in fact, silent as to whether the fixing substrate 1001 is a plastic substrate. The Applicant respectfully submits that this deficiency in Yamazaki '645 is not cured by Okazaki, Shiraishi or the other prior art references of record. The Official Action has not set forth an explanation as to why one of ordinary skill in the art at the time of the present invention should have formed the fixing substrate 1001 of Yamazaki '645 of plastic.

Also, the Official Action asserts that Okazaki discloses "a first substrate (16)" and "a light emitting diode ... formed in the concave portion (20) of the first substrate ... (16) [and] a metal film (19) formed over the plastic substrate (16)" (page 3, Id.; Figures 6 and 10 reproduced below).



The Applicant respectfully disagrees and traverses the assertions in the Official Action. The Official Action appears to be asserting that the silicon rubber substrate 16 (Figure 10, above at right) of Okazaki has a concave portion and that the metallic layer 19 (Figure 6, above at left) is formed over the silicon rubber substrate 16. However, Okazaki clearly discloses that "FIG. 10 shows how the resin is sealed in the cavities 20 ... the four sides of the substrate is positioned and fixed by fixing members such as silicon rubber substrate 16" (column 6, lines 45-52). That is, Okazaki teaches that the silicon rubber substrates 16 are not part of the light emitting element (Figure 6) itself but merely part of a jig for forming the light emitting element. In other words, Okazaki does not teach or suggest that the structure shown in Figure 6 is formed on the silicon rubber substrates 16. Consequently, the Applicant respectfully submits that Okazaki does not teach or suggest that a metallic layer 19 is formed over a silicon rubber substrate 16. Therefore, Okazaki does not teach or suggest a light-emitting element formed over a first plastic substrate.

Further, the Official Action asserts that "Shiraishi discloses the first substrate (11) is larger than the second substrate (12)" (page 3, *Id.*; Figure 6B reproduced below).



However, Shiraishi does not teach or suggest why one of ordinary skill in the art at the time of the present invention should have formed the fixing substrate 1001 of Yamazaki '645 of plastic; or why one of ordinary skill in the art at the time of the present invention should have formed the metallic layer 19 of Okazaki over the silicon rubber substrate 16.

Therefore, the Applicant respectfully submits that Yamazaki '645, Okazaki and Shiraishi, either alone or in combination, do not teach or suggest first and second plastic substrates and a light-emitting element formed over the first plastic substrate; or that the first plastic substrate has a concave portion and that the light-emitting element is formed in the concave portion.

Since Yamazaki '645, Okazaki and Shiraishi do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained.

Furthermore, there is no proper or sufficient reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Yamazaki '645, Okazaki and Shiraishi or to combine reference teachings to achieve the claimed invention. MPEP § 2142 states that the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. It is respectfully submitted that the Official Action has failed to carry this burden. While the Official Action relies on various teachings of the cited prior art to disclose aspects of the claimed invention and asserts that these aspects could be modified in the manner asserted in the Official Action, it is submitted that the Official Action does not adequately set forth why one of skill in the art would combine the references to achieve the features of the present invention.

The test for obviousness is not whether the references “could have been” combined or modified as asserted in the Official Action, but rather whether the references should have been. As noted in MPEP § 2143.01, “The mere fact that references can be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art” (emphasis in original). KSR International Co. v. Teleflex Inc., 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007). Thus, it is respectfully submitted that the standard set forth in the Official Action is improper to support a finding of *prima facie* obviousness.

The Official Action concedes that Yamazaki ‘645 “does not disclose a light emitting device formed in the concave portion of the first substrate a resin covering the light emitting device; wherein the first plastic substrate is larger than the second substrate; wherein the metal film is formed over the concave portion” (page 3, Paper No. 20080407). As described above, the Official Action relies on Okazaki and Shiraishi to allegedly teach these features. The Official Action asserts that “the first substrate of Yamazaki (1108) would have Okazaki’s concavity with an LED surrounded by a resin attached to Yamazaki’s adhesive (1107)” and that “[it] would have been obvious ... to modify Yamazaki’s display to include Okazaki et al’s light emitting device ... and to include Shiraishi’s larger first substrate” (pages 3-4, Id.). The Applicant respectfully disagrees and traverses the above assertions in the Official Action.

As noted in MPEP § 2143.01, Part V, if a proposed modification renders the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Also, as noted in MPEP § 2143.01, Part VI, if a proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

In the present application, the Official Action asserts that the second substrate 1108 of Yamazaki '645 corresponds to the claimed first plastic substrate in the present application. However, according to the claimed limitations of the present invention, a light-emitting device is formed over the first plastic substrate; a resin is covering the light-emitting device; and an insulating film is adhered to the resin with an adhesive. Consequently, in order to be consistent with the limitation of the present application, Okazaki's light emitting device would need to be placed between a color filter 1106 and an adhesive layer 1107 of Yamazaki '645 (see Figure 12, reproduced above). In this hypothetical combination, the color filter 1107 is positioned under the light emitting device with respect to liquid crystal 1004, thus the color filter 1107 does not function because light from the light emitting device does not transmit through the color filter 1107. Namely, if Okazaki is combined with Yamazaki '645 in the manner proposed in the Official Action in an attempt to obtain the liquid crystal display apparatus of the present application, the functions of Yamazaki '645 are destroyed. As such, the modification proposed in the Official Action would change the principle of operation of the prior art invention being modified; therefore, the teachings of the references are not sufficient to render the claims *prima facie* obvious.

Furthermore, the present claims clearly recite that the light-emitting device and the semiconductor device are interposed between the first plastic substrate and the second plastic substrate. However, in Shiraishi, it appears that the light-emitting device is not formed over the first plastic substrate (see Figure 6B reproduced above). The Applicant respectfully submits that the Official Action does not fully explain why one of ordinary skill in the art at the time of the present invention would have had a reason to apply the first and second substrates of Shiraishi to the first and second plastic substrates of the hypothetical combination of Yamazaki '645 and Okazaki to achieve the features of the present invention.

Therefore, the Applicant respectfully submits that the Official Action has not provided a proper or sufficient reason, either in the references themselves or in the

knowledge generally available to one of ordinary skill in the art, to modify Yamazaki '645, Okazaki and Shiraishi or to combine reference teachings to achieve the claimed invention.

In the present application, it is respectfully submitted that the prior art of record, either alone or in combination, does not expressly or impliedly suggest the claimed invention and the Official Action has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

For the reasons stated above, the Official Action has not formed a proper *prima facie* case of obviousness. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

The Official Action rejects dependent claims 56-59 as obvious based on the combination of Yamazaki '645, Okazaki, Shiraishi and U.S. Publication No. 2001/0000439 to Ohta. The Official Action rejects dependent claim 5 as obvious based on the combination of Yamazaki '645, Okazaki, Shiraishi and U.S. Patent No. 4,648,691 to Oguchi. The Official Action rejects dependent claim 6 as obvious based on the combination of Yamazaki '645, Okazaki, Shiraishi and U.S. Publication No. 2002/0041348 to Yokoyama. The Official Action rejects dependent claims 8, 10, 12 and 14 as obvious based on the combination of Yamazaki '645, Okazaki, Shiraishi and U.S. Publication No. 2002/0130985 to Weindorf. The Official Action rejects dependent claims 15, 17 and 18 as obvious based on the combination of Yamazaki '645, Okazaki, Shiraishi and U.S. Patent No. 6,331,381 to Chaudhari. The Official Action rejects dependent claim 16 as obvious based on the combination of Yamazaki '645, Okazaki, Shiraishi and U.S. Patent No. 5,781,263 to Kawagoe. The Official Action rejects dependent claim 19 as obvious based on the combination of Yamazaki '645, Okazaki, Shiraishi and U.S. Patent No. 4,202,607 to Washizuka. The Official Action rejects dependent claim 20 as obvious based on the combination of Yamazaki '645, Okazaki, Shiraishi and U.S. Patent No. 4,536,014 to Boutaleb.

Please incorporate the arguments above with respect to the deficiencies in Yamazaki '645, Okazaki and Shiraishi. Ohta, Oguchi, Yokoyama, Weindorf, Chaudhari, Kawagoe, Washizuka or Boutaleb does not cure the deficiencies in Yamazaki '645, Okazaki and Shiraishi. The Official Action relies on Ohta, Oguchi, Yokoyama, Weindorf, Chaudhari, Kawagoe, Washizuka or Boutaleb to allegedly teach the features of the dependent claims (see pages 5-10, Paper No. 20080407).

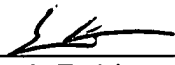
However, Yamazaki '645, Okazaki, Shiraishi and Ohta, Oguchi, Yokoyama, Weindorf, Chaudhari, Kawagoe, Washizuka or Boutaleb do not teach or suggest the following features or that Yamazaki '645, Okazaki and Shiraishi should be modified to include any of the following features: first and second plastic substrates and a light-emitting element formed over the first plastic substrate; or that the first plastic substrate has a concave portion and that the light-emitting element is formed in the concave portion.

Also, Yamazaki '645, Okazaki, Shiraishi and Ohta, Oguchi, Yokoyama, Weindorf, Chaudhari, Kawagoe, Washizuka or Boutaleb do not teach or suggest how Okazaki could be combined with Yamazaki '645 in a manner that does not destroy the functions of Yamazaki '645, or why one of ordinary skill in the art at the time of the present invention would have had a reason to apply the first and second substrates of Shiraishi to the first and second plastic substrates of the hypothetical combination of Yamazaki '645 and Okazaki to achieve the features of the present invention.

Since Yamazaki '645, Okazaki, Shiraishi and Ohta, Oguchi, Yokoyama, Weindorf, Chaudhari, Kawagoe, Washizuka or Boutaleb do not teach or suggest all the claim limitations and since there is insufficient reason to combine Yamazaki '645, Okazaki and Shiraishi, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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